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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/803,310	03/18/2004	Yuezhong Meng	1238.70071	5778
24978	7590	01/23/2008		
GREER, BURNS & CRAIN 300 S WACKER DR 25TH FLOOR CHICAGO, IL 60606			EXAMINER MCDONOUGH, JAMES E	
			ART UNIT 1793	PAPER NUMBER
			MAIL DATE 01/23/2008	DELIVERY MODE PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/803,310	Applicant(s) MENG ET AL.	
	Examiner James E. McDonough	Art Unit 1793	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 20 December 2007.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 5-7 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 5-7 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Original Rejection

Claims 5-7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kuo et al. (USP 6,593,267) in view of Alexandre et al. (WO 99/47598) and further in view of Lewis et al. (USP 4,510,257).

Regarding claim 5

Kuo et al. teaches a catalyst system comprising a solid support such as montmorillonite and a carboxylate metal salt such as zinc (column 13, lines 23-49; column 14, line 55 to column 15, line 14; column 15, lines 50-59, column 16, lines 13-21; and column 17, lines 54-56).

Although, Kuo et al. lacks disclosure that the catalyst is capable of copolymerizing carbon dioxide and epoxides, or that the zinc carboxylate is intercalated within the layered matrix. However, polymerizing carbon dioxide with epoxides is an intended use and **does not** affect the patentability of a composition and because Alexandre et al. teaches that mica type silicates can be modified by treatment with ion exchange of alkali or alkaline earth metal ions, and that this modification step renders the normally hydrophilic layers organophilic, and increases the interlayer spacing between adjacent silicate layers, which, in turn enhance the dispersability of the particles in the matrix (page 1, lines 10-20) and allow the catalyst to penetrate into the

support and not be just on the surface, it would have been prima facie obvious to someone of ordinary skill in the art at the time the invention was made to modify the teachings of Kuo et al. by intercalating the catalyst into the support, as suggested by Alexandre et al..

Although, both Kuo et al. and Alexandre et al. fail to disclose that the intercalated matrix is calcined, they do disclose the rest of the limitations of the claim, however, because Lewis et al. teaches that at times the intercalated clays are used as such after removal of solvent, but more frequently the intercalated clay is subsequently calcined in an oxidizing atmosphere from 400-800 °C (column 8, lines 18-24), and it is well known that calcining a silica matrix will lock the matrix into the form after calcining, it would have been prima facie obvious to someone of ordinary skill in the art at the time the invention was made to modify the teachings of Kuo et al. and Alexandre et al. by calcining the intercalated matrix, as suggested by Lewis et al.

Regarding claim 6

Kuo et al teaches using water as a polar solvent (column 1, lines 39-47).

Regarding claim 7

Kuo et al. teaches using a cyclic aliphatic or aromatic solvent such as toluene (column 18, lines 18-44).

Response to Arguments

Applicants argue that there is no motivation to combine the references. This is not persuasive because the rejection set forth in the action dated 10/17/2007 clearly teaches a motivation to combine such as making the support more hydrophilic to enhance the dispersability of the catalyst in the support and to lock the support into a desired conformation.

Applicants argue that Kuo teaches a physical mixture of two catalyst, not a chemical combination. This is not persuasive because: 1.) This is a chemical combination as it is clearly a combination of two chemicals 2.) It is not understood how this argument has anything to do with the patentability of the claims as this limitation applicants are alluding to is not in the instant claims. In response to applicant's argument that the references fail to show certain features of applicant's invention, it is noted that the features upon which applicant relies (i.e., physical mixture vs. chemical combination) are not recited in the rejected claim(s). Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993).

Applicants argue that there is no expectation of success because Kuo teaches montmorillonite while Alexander teaches modified montmorillonite. This is not persuasive because one skilled in the art would not expect the catalyst to stop

functioning just because it is support on modified montmorillonite versus regular montmorillonite.

Applicants argue that none of the reference teaches that the catalyst are useful for copolymerization of carbon dioxide and epoxides. This is not persuasive because:

- 1.) This is an intended use and does not affect the patentability of the claims
- 2.) The references teach that these are catalyst compositions
- 3.) It is well known in the art that many catalyst can serve to catalyze more than one type of reaction
- 4.) One skilled in the art would appreciate that catalyst having metal carboxylates could be used for copolymerization of carbon dioxide and epoxides absent any evidence to the contrary.

Applicants argue the order of processes and that their support is calcined before the catalyst is added. This is not persuasive because:

- 1.) the order of addition is obvious absent any showing of criticality
- 2.) The references never explicitly state that the catalyst is added before calcining and one skilled in the art would be motivated to calcine before the addition of the catalyst as the catalyst may be degraded by the calcining treatment.

Applicants argue that the reference do not teach dissolving the catalyst in a polar solvent with a pH of 1.0 to 4.0. This is not persuasive because the skilled artisan would appreciate that a zinc carboxylate would not dissolve in a solvent with a basic pH and that lowering the pH will increase the solubility of the catalyst in the solvent:

Conclusion

This is a RCE of applicant's earlier Application No. 10/803,310. All claims are drawn to the same invention claimed in the earlier application and could have been finally rejected on the grounds and art of record in the next Office action if they had been entered in the earlier application. Accordingly, **THIS ACTION IS MADE FINAL** even though it is a first action in this case. See MPEP § 706.07(b). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no, however, event will the statutory period for reply expire later than **SIX MONTHS** from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to James E. McDonough whose telephone number is (571)272-6398. The examiner can normally be reached on 8:30am-5:00pm.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jerry Lorengo can be reached on (571)272-1233. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

JEM 1/17/2008



J.A. LORENCO
SUPERVISORY PATENT EXAMINER